Two New Tabanidae from Southeastern United States (Diptera)

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Abstract: *Asaphomyia floridensis* from Highlands County, Florida, is described as new. *Asaphomyia* includes only one other described species, *A. texensis* Stone, known from three counties in Texas. *Chrysops dixianus*, a species related to *Chrysops pudicus* Osten Sacken, is also described as new; specimens were seen from Virginia, North Carolina, South Carolina, Florida, Alabama, Mississippi, and Louisiana.

Introduction

With really distinctive species, there is always a temptation when making determinations to spend little time looking at them. In the Tabanidae, I know of no Nearctic species more distinctive than *Asaphomyia texensis* Stone (1953). When specimens of what seemed to be this species, known only from three counties in Texas, were collected in Florida, I considered it only an interesting extension of range. It was only when I began a comparative study of the antennae of the Florida specimens that I found they represented a species quite distinct from the one in Texas.

For some years I had noted in routine identifications and had found in some collections under *Chrysops pudicus* Osten Sacken a southeastern *Chrysops* that was undescribed. I had hoped for the male of the species before describing it as new but now a name is needed for some manuscripts in preparation covering both a faunal study and the immature stages.

The types of both are retained in my collection for the present.

Asaphomyia **floridensis**, n. sp.

Holotype ♀. *Length*, 11 mm. *Wing*, 10 mm.

Head. First 2 antennal segments brown, each about as long as wide, with short black hairs; third antennal segment with basal annulus almost round, as wide as first segment, brown, slightly paler at base with a few black hairs and many very short silver hairs; remainder of annuli brown, in form of a style ¼ width of first annulus at base and tapering to ⅛ of

Acknowledgments: The loan of a ♀ paratype of *Asaphomyia texensis* by Pedro Wygodzinsky of the American Museum of Natural History and a comparison of the holotype ♀ of *A. texensis* with the holotype ♀ of *A. floridensis* by George Steyskal of the Systematic Entomology Laboratory, U.S.D.A., is greatly appreciated. Specimens which made this study possible were received from the following: T. R. Adkins, R. G. Beard, W. B. Ezell, G. B. Fairchild, S. W. Frost, J. T. Goodwin, H. M. Henry, J. E. Lloyd, D. C. Sheppard, R. E. Silberglied, M. A. Tidwell, and R. L. Watson.

width near apex; the style of the right antenna has six apparent segments and that of the left five such segments and, in both, the last segment is equal in length to the total of the preceding style segments; the last style segment has a tuft of stiff black hairs at the tip. Frons brown pollinose with no trace of calli, 1.8 times as high as width below and slightly widened below; the ocelli are on a low, brown pollinose tubercle; vertex behind ocelli with a clump of stiff black hairs and a row of shorter black hairs which rim upper occipital margin. Clypeus and genae brown with black hairs. Beard black. Palpi dark brown, second segment stout at base tapering to a truncate apex, both segments with long black hairs. Proboscis shorter than palpi, brown with black and brown hairs.

Thorax. Dorsum brown, unstriped, with a few black hairs and many recumbent golden hairs. Pleurae uniformly brown. Legs brown, mostly brown and black haired with some scattered golden hairs; hind tibial spurs short. Wings uniformly brown; bifurcation of third longitudinal vein with a long appendix.

Abdomen. Rather uniformly brown dorsally and ventrally except seventh segment a darker shade of brown and incisures of second and third tergites slightly paler; with many dark brown and golden brown hairs.

Allotype (♂). *Length*, 10.5 mm. *Wing*, 10 mm.

Head. Antennae similar to ♀ except basal portion of third segment a bit narrower and slightly paler in color; 5 apparent segments in the style of each antenna. Frontal triangle, cheeks and genae dark brown pollinose, the latter and beard with long black hairs. Ocelli on a slightly raised, grayish brown pollinose tubercle, which posteriorly has a tuft of long stiff black and golden brown hairs. Palpi dark brown, second segment stouter and more acutely tapered than in ♀, with long black hairs. Proboscis subequal to palpi, dark brown with dark hairs.

Thorax. Dorsum, pleurae, wings, legs, and halteres as in ♀ except fewer golden hairs on dorsum and legs.

Abdomen. Incisures of second, third, and fourth tergites a little paler than in ♀; fifth and following tergites darker brown than anterior tergites. The porportion of golden to dark hairs is greater than in ♀.

Holotype and Allotype. Archbold Biological Station, Lake Placid, Highlands County, Florida, 7 June 1966, 15 w. UV blacklight (R. Silberglied).

Paratypes. 4♂♂ Archbold Biological Station, Highlands Co., Florida: 20 May 1968 (S. W. Frost), 8 June 1966 (Robert G. Beard), 20 June 1966, 15 w. UV blacklight (R. Silberglied); 2♂♂ 2 mi. NE of intersection of rte 70 and Fla. 27, Highlands Co., Florida, oak palmetto scrub, 9 July 1969 and 8–9 July 1969; the latter specimen carries notation " 'asleep' on twig of shrub 1 m. high."

Paratypes will be deposited in the collections of Cornell University, U.S. Museum of Natural History, and G. B. Fairchild.

Variations. The paratypes range in length from 9 to 12 mm with an average of 10.4 mm. The apparent segments of the antennal style range from 3 to 6 and these vary in the same specimen in number and distinctness; in all cases the terminal annulus is longer than any of the others.

A. floridensis is a more slender-appearing insect than *A. texensis* and differs in a number of characters: The tubercle on which the ocelli rest is less raised and is pollinose, including

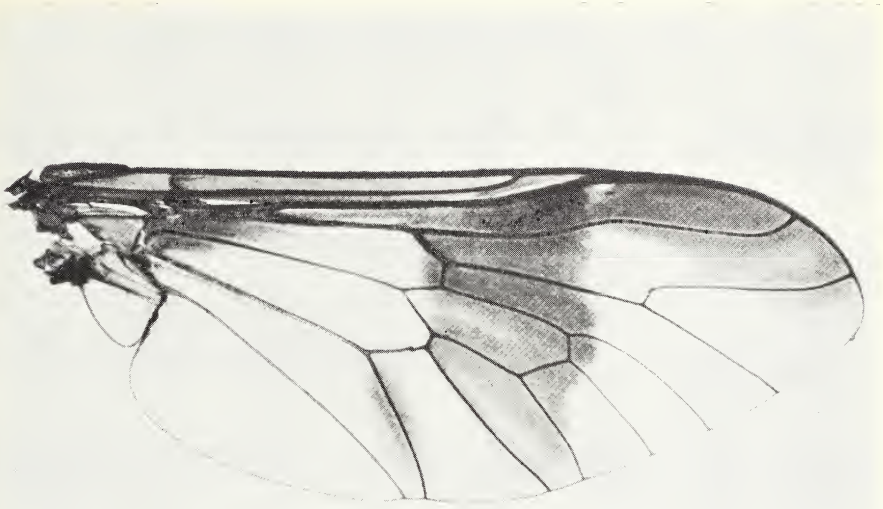

Fig. 1. Wing of *Chrysops dixianus*, n. sp.

the area between the ocelli, in considerable contrast to the high, shining tubercle in *texensis*; the antennal style is less slender, darker, and more likely to be subdivided. When viewed laterally the occiput is practically invisible, whereas in *texensis* it is wide and conspicuous; many of the recumbent hairs on the dorsum of the thorax are golden rather than black; the wings are uniformly brown rather than darker anteriorly. The wings of *floridensis* are narrower, the ratio of greatest width to greatest length in the ♀ holotype being 1:3.30 and in the ♂♂ ranging from 1:3.14 to 1:3.53 with an average of 1:3.34, whereas in *texensis* the ratio is 1:2.41 in the ♀ holotype, 1:2.77 in a ♀ paratype and 1:2.64 in a ♂ paratype.

The ♀ holotype of *A. texensis* is from Columbus (Colorado County), Texas, and carries no collection date. The type series included a ♂ from Victoria (Victoria County), Texas, 3 May 1913 and 2♀♀ and 2♂♂ from Weser (Goliad County), Texas, 11 May 1952. No specimens from Texas or elsewhere have been reported subsequent to Stone's description and it is somewhat of a surprise to encounter a second species in Florida.

Chrysops **dixianus**, n. sp.

Holotype (♀). *Length*: 8.25 mm (Fig. 1).

Head. First antennal segment yellow, second a deeper shade of yellow, basal portion of flagellum yellow-brown, annuli dark brown, nearly black; first two segments with black hairs. Frons grayish yellow pollinose with a scattering of fine yellow hairs, most dense near the vertex; frontal callus yellow, ⅔ as high as wide, somewhat pointed above. Fronto-clypeus shining yellow with no dark spots; cheeks shining yellow below, yellow pollinose above. Palpi dark yellow with short black hairs and a few longer yellow hairs. Proboscis dark brown.

Thorax. Dorsum dark brown in ground color with a median brown pollinose stripe which is flanked by grayish yellow pollinose stripes; 2 sublateral subshining brown stripes merge with the median stripe near the scutellum; the stripes immediately above the wing bases are grayish yellow pollinose; scutellum dark brown with apical half orange-brown. Pleurae dark brown with 2 broad yellow pollinose stripes. Hairs of thorax pale yellow. Halteres dark brown. Forelegs with coxae and femora yellow, the latter somewhat darker at apex, tibiae with basal half yellow, apical half and tarsi dark brown; middle coxae dark brown, femora, tibiae, and metatarsi yellow, balance of tarsi dark brown; hind coxae and basal 4/5 of femora brown, apical ⅕ of femora and basal ⅓ of tibiae yellow-brown gradually shading in the latter to dark brown, metatarsi and adjoining segment yellow-brown, balance of tarsi dark brown. Hairs on legs match the ground color of the integument. Wing as figured; hyaline triangle not quite reaching second longitudinal vein, fifth posterior cell mostly hyaline, apical spot crossing slightly more than half of the upper branch of the third longitudinal vein.

Abdomen. First tergite yellow shading to yellow-brown beneath scutellum; second tergite yellow, the anterior half entirely so, the posterior half with a dark brown marking in the shape of a flattened inverted "V" which continues as a dark shadow to the posterior margins of the segment where the color is intensified to form a small brown spot; third tergite with a dark brown band, shading to chestnut brown laterally, covering the anterior half of the segment, shallowly indented by the yellow posterior border of the segment; fourth tergite similar to third but indentation even shallower and with chestnut brown portion more extensive; fifth and following tergites dark brown with a grayish yellow posterior border. Venter pale yellow with a vague indication of a dark median spot on third and fourth sternites, such a spot distinct on fifth sternite, sixth sternite dark brown.

I have seen two damaged specimens of what may be the male of this species but it seems advisable to withhold a description until specimens in better condition are available.

The name *dixianus* is derived from the area in which the species is found, known in the vernacular as "Dixie."

Holotype. Wedge Plantation, McClellanville, South Carolina, 28 May 1970 (LLP).

Paratypes. **Virginia**: Sussex Co, 8 June 1973 and Greensville Co., 20 June 1973 (Steve Jones). **North Carolina**: Williamston, 8 July (G. Fairchild). **South Carolina**: Wedge Plantation, McClellanville, 28 May 1970 (LLP); Hobcaw (Baruch) Plant., Georgetown, 29 May 1970 (Pechuman & Burton); Sumter, 24, 25 June 1970 (T. R. Adkins, Jr.); Boykin, Sumter Co., 27 June 1968 (W. B. Ezell, Jr.); Sumter Co., 27 July 1971 (D. C. Sheppard); Sweden, Orangeburg Co., 2 July 1968 (Adkins, Ezell, Krebs); Marlboro County, 5 June 1970 (Sheppard); Berkeley Co., 3 July 1970 (T. R. Adkins, Jr.); Berkeley Co., 1 July 1960, 6, 27 July 1971 (D. C. Sheppard). **Florida**: Cody, 18 May 1935; Wacissa, 5 June 1935; Greenville, 12 June 1935; Highlands Hammock St. Pk., Highlands Co., 11 May 1965 (LLP); Welaka, 11, 26 May 1961 (A. & H. Dietrich); Levy Co., 2 June 1960 (F. S. Blanton); Wakulla Springs, 5 July 1950 (A. G. B. Fairchild); Gainesville, Alachua Co., 8 May 1965, 21 May 1964 (J. E. Lloyd); Jackson Co., 31 May 1965 (F. J. Moore); 3 mi. SW of Cantonment, Escambia Co., 22 May 1965 (Ray Tidwell). **Alabama**: Blue Girth Creek, Dallas Co., 19 June, 18 August 1964 (R. L. Watson); Bear Creek, Autauga Co., 3 August 1966 (Hays and Watson). **Mississippi**: Logtown, Hancock Co., 23 June 1966 (Diamond and Bradford). **Louisiana**: Approx. 1 mi. S. of Pearl River, St. Tamany Par., 15 June 1969 (Mac Tidwell).

Paratypes will be deposited in the collections of: American Museum of Natural History, Auburn University, British Museum (Natural History), Canadian National Collection, Clemson University, Cornell University, Florida State Collection of Arthropods, Museum

of Comparative Zoology, Ohio State University, Pennsylvania State University, SUNY College of Environmental Science and Forestry, U.S. Museum of Natural History, John F. Burger, W. B. Ezell, G. B. Fairchild, J. T. Goodwin, C. B. Philip, R. H. Roberts, D. C. Sheppard, and Mac A. Tidwell.

Variations. The series of specimens is quite uniform. Length varies from 7.5 to 9 mm with an average of 8.25 mm. The wing pattern is uniform and the characters of the head and thorax show only slight variations; the proportion of brown and yellow-brown on the hind legs differs to some extent and the pale thoracic stripes in a few specimens have a greenish tinge. The dark marking on the second abdominal tergite in a few specimens is composed of two dashes connected by a brownish shadow; in others it is more extensive than in the type, nearly reaching the lateral margins of the segment. The size and intensity of the dark median markings on the venter differ but in all cases the first and second sternites are completely yellow.

As mentioned above, *Chrysops dixianus* was found in several collections under *C. pudicus*. From that species, *dixianus* may be separated by the brown thorax, pale tipped scutellum, broader apical spot, hyaline triangle not reaching the second longitudinal vein, completely yellow frontal callus, no distinct dark spot on abdomen under the scutellum and pale median markings of second and third abdominal tergites broader and less distinct. *C. pudicus* is a variable species and occasional specimens have a broader than usual apical spot and/or hyaline triangle not reaching the second longitudinal vein; the other characters mentioned above were found to distinguish *dixianus* from these specimens.

Chrysops dixianus will run to couplet 46 in my recent (1973) key to the species of *Chrysops* found in Virginia. A modification of this portion of the key to include *dixianus* follows:

46. Abdominal markings black and median marking of second segment usually reaches anterior margin; frontal callus normally black but sometimes yellow; usually at least basal portion of hind femora black ..... *dimmocki* Hine
    Abdominal markings pale to dark brown, sometimes evanescent; median marking of second abdominal segment rarely attains anterior margin; frontal callus yellow; hind femora yellow to brown 47
47. Thorax greenish-gray with fuscous stripes; outer margin of crossband usually sinuous ..... *celatus* Pechuman
    Thorax brown or yellowish in ground color with brown stripes; outer margin of crossband concave, straight, bowed, or sinuous 48
48. Dark median marking of second abdominal segment reaching about ⅔ across segment; outer margin of crossband usually straight or somewhat concave; hind femora yellow ..... *flavidus* Wiedemann
    Dark median marking of second abdominal segment reaching only about half-way across segment; outer margin of crossband frequently bowed or sinuous; hind femora partly or all brown 49
49. Apical spot occupying upper half of second submarginal cell and sharply outlined; fifth posterior cell largely hyaline; smaller species averaging 8.25 mm ..... *dixianus*, n. sp.
    Apical spot indefinite in outline, extending into lower half of second submarginal cell as a paler infuscation which may continue into apical portions of first, second, and third posterior cells; fifth posterior cell largely infuscated; larger species averaging 9.5 mm ..... *reicherti* Fairchild

That *Chrysops dixianus* can be a common pest is indicated by 124 specimens collected on 6 July 1971 in Berkeley County, South Carolina, by D. C. Sheppard.

Literature Cited

PECHUMAN, L. L. 1973. The insects of Virginia No. 6. The horse flies and deer flies of Virginia (Diptera: Tabanidae). V. P. I. and State Univ. Research Div. Bull., **81**: 1–92.

STONE, ALAN. 1953. New tabanid flies of the tribe Merycomyiini. Wash. Acad. Sci. J., **43(8)**: 255–258.

BOOK REVIEW

The South Asiatic Olethreutini (Lepidoptera, Tortricidae). A. Diakonoff. Zool. Mon. Rijksmuseum van Nat. Hist. No. 1. Brill, Leiden. 1973. XXI + 699 pp., 15 pls. (1 col.), 732 figs. 208 guilders.

This is a highly important taxonomic monograph of the southern Asiatic members of a large, worldwide group treated by various authors as a tribe, a subfamily, or even a family. It is based on all known material in the collections of the world. The author is a recognized authority on these and related moths, on which he has published voluminously. He himself lived and collected in Java for many years. The present work is especially valuable since the Palaearctic and Australian faunas are being intensively studied by other authors. The Nearctic fauna, long overdue for revision, is also being studied. The author's opinions of the taxonomy of the larger taxa will therefore be especially important. The present work covers 12 subtribes, 94 genera, 17 subgenera, 430 species, 14 subspecies, and 2 "formae." Of these, 11 tribes, 39 genera, 3 subgenera, 176 species, and 7 subspecies are described as new. Many new combinations are also made. Keys to these taxa are given, based on all usable characters, and very thorough descriptions of all taxa are included. Dates, localities, and institutional locations of specimens are given, including, of course, types when these are known. Both male and female genitalia are figured whenever possible, as well as many heads and venations. Food-plant records are also given for many species.

A preliminary section contains, among other things, a discussion of the general classification of the Tortricidae, past and present, and of the morphology of certain genitalic and scent organs. A discussion of the Palaearctic genera is given for comparison. A new term, "apallotype," is proposed for a supplemental type of the opposite sex from the type, a category sometimes confusingly, called "neallotype." It is hardly necessary to state that this is a taxonomic work of the highest quality, one that will be essential for all students of this and related groups anywhere in the world.

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